

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-15. Cancelled.

16. (New) A method for transmitting data as Ethernet messages, in compliance with an Ethernet transmission protocol, on an Ethernet network having a baud rate, said method comprising the steps of:
- converting the data, during transmission, into a plurality of Ethernet messages;
 - imposing a break time between transmission of each of the plurality of Ethernet messages; and
 - transmitting each of said plurality of Ethernet messages sequentially, cyclically, and continuously during a cycle having a cycle time.
17. (New) The method according to claim 16, further comprising the steps of:
- determining a size of each of said plurality of Ethernet messages;
 - adjusting the cycle time responsive to the size of each of said plurality of Ethernet messages; and
 - limiting the cycle time to a maximum permissible duration.
18. (New) The method according to claim 16, further comprising the steps of:
- determining a size of each of said plurality of Ethernet messages;
 - adjusting the size of each of said plurality of Ethernet messages responsive to the cycle time; and
 - limiting the size of each of said plurality of Ethernet messages to ensure continuous and complete transmission of each of said plurality of Ethernet messages during the cycle.

19. (New) The method according to claim 18, wherein the step of adjusting the size of each of said plurality of Ethernet messages is further responsive to the baud rate of the Ethernet network, and wherein each of said plurality of Ethernet messages includes a start identifier, a preamble, a checksum, and a break time between transmissions.
20. (New) The method according to claim 16, further comprising the steps of:
determining a number of said plurality of Ethernet messages;
adjusting the number of said plurality of Ethernet messages responsive to the cycle time; and
limiting the number of said plurality of Ethernet messages to ensure continuous and complete transmission of said plurality of Ethernet messages during the cycle.
21. (New) The method according to claim 20, wherein the step of adjusting the number of said plurality of Ethernet messages is further responsive to the baud rate of the Ethernet network, and wherein each of said plurality of Ethernet messages includes a start identifier, a preamble, a checksum, and a break time between transmissions.
22. (New) The method according to claim 16, further comprising the step of calculating a maximum size of each of said plurality of Ethernet messages as an arithmetic difference between:
a product of the baud rate of the Ethernet network and the cycle time; and
an arithmetic total of a length of a start identifier, a length of a preamble, a length of a checksum, and a break time between transmissions.
23. (New) The method according to claim 16, further comprising the steps of:
aggregating said plurality of Ethernet messages into a transmission packet;

calculating a size of the transmission packet as an arithmetic total of a size of each of said plurality of Ethernet messages comprising the transmission packet; and
limiting the size of the transmission packet to a maximum permissible size.

24. (New) The method according to claim 16, further comprising the steps of:
aggregating said plurality of Ethernet messages into a transmission packet;
storing the transmission packet in a buffer; and
transmitting one or more transmission packets from the buffer after the buffer fills to a proscribed level.
25. (New) The method according to claim 16, further comprising the steps of:
assembling data into said plurality of Ethernet messages; and
synchronistically transmitting said plurality of Ethernet messages.
26. (New) A node for an Ethernet network, the node compliant with an Ethernet transmission protocol and comprising a control unit including:
means for converting data into a plurality of Ethernet messages; and
means for transmitting said plurality of Ethernet messages sequentially,
cyclically and continuously during a cycle having a cycle time and with a prescribed break time between transmissions.
27. (New) The node according to claim 26, wherein said means for transmitting said plurality of Ethernet messages comprises a transmission unit and the node further comprises means for controlling said transmission unit.
28. (New) The node according to claim 26 further comprising:
means for determining a size of each of said plurality of Ethernet messages;
means for adjusting the cycle time responsive to the size of each of said plurality of Ethernet messages; and

means for limiting the cycle time to a maximum permissible duration.

29. (New) The node according to claim 26 further comprising:
means for determining a size of each of said plurality of Ethernet messages;
means for adjusting the size of each of said plurality of Ethernet messages responsive to the cycle time; and
means for limiting the size of each of said plurality of Ethernet messages to ensure continuous and complete transmission of said plurality of Ethernet messages during the cycle.
30. (New) The node according to claim 26 further comprising:
means for determining a number of said plurality of Ethernet messages;
means for adjusting the number of said plurality of Ethernet messages; and
means for limiting the number of said plurality of Ethernet messages responsive to a prescribed cycle time.
31. (New) The node according to claim 26 further comprising means for determining a maximum permissible size of each of said plurality of Ethernet messages.
32. (New) The node according to claim 26 further comprising:
means for aggregating said plurality of Ethernet messages into a transmission packet;
means for storing said transmission packet; and
means for transmitting one or more transmission packets.
33. (New) The node according to claim 26 further comprising:
means for assembling data into said plurality of Ethernet messages; and
means for synchronistically transmitting said plurality of Ethernet messages.

34. (New) An Ethernet network comprising:
- an Ethernet transmission link;
 - a plurality of nodes connected to said Ethernet transmission link, each of said plurality of nodes having a control unit including:
 - means for converting data into a plurality of Ethernet messages; and
 - means for transmitting said plurality of Ethernet messages sequentially, cyclically and continuously during a cycle having a cycle time and with a prescribed break time between transmissions; and
 - a transmission channel for transmitting the plurality of Ethernet messages without collision.
35. (New) The Ethernet network of claim 34, wherein said Ethernet transmission link comprises a ring-shaped topological arrangement and wherein said plurality of Ethernet messages are transmitted from one node to a next node.